

## ABSTRACT OF THE DISCLOSURE

A synthetic impedance telecommunication line driver has no electrical energy-dissipating elements in series with its output, and synthesizes its output impedance in accordance with current fed back from an output current (mirror) sensing circuit. This allows the driver to realize substantially reduced power requirements for driving a telecommunication line, such as, but not limited to a DSX-1 line. The driver includes an operational amplifier having a first polarity input coupled through an input resistor to an input port, to which a signal voltage to applied to an output port is coupled. A second polarity input of the amplifier is coupled to a reference voltage. A feedback resistor is coupled between the amplifier output and its inverting input. An output current-dependent current source, such as a current mirror coupled in circuit with the output node, generates a current as a small fraction  $k$  of the output current. This mirrored fraction of the output current is fed back to an input of the amplifier, and enables the output impedance  $Z_{out}$  of the driver to be defined in terms of the mirror current ratio  $k$  and the value of the driver amplifier's feedback resistor.